National Aeronautics and Space Administration

EXPLORE SCIENCE

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NASA Science

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NASA SCIENCE

AN INTEGRATED PROGRAM

Planetary Science

Earth Science

Joint Agency Satellite Division

Astrophysics

Heliophysics

RESEARCH

~10,000 U.S. Scientists Funded
~3,000 Competitively Selected Awards
~$600M Awarded Annually

TECHNOLOGY DEVELOPMENT

~$500M Invested Annually

SMALLSATS/ CUBESATS

22 Science Missions
14 Technology Demos

EARTH-BASED INVESTIGATIONS

20 Airborne Missions
8 Global Networks

SOUNDING ROCKETS

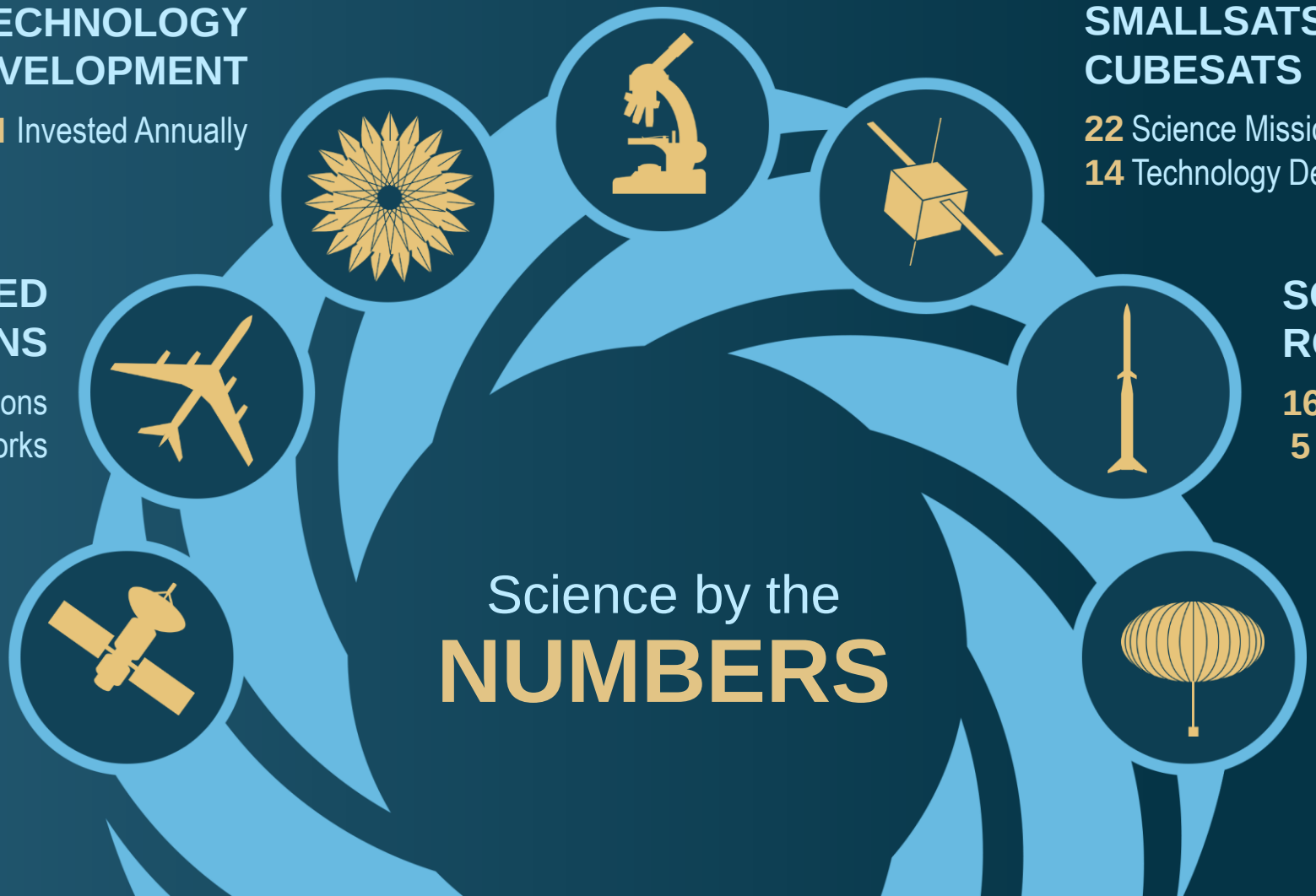
16 Science Missions
5 Tech/Student Missions

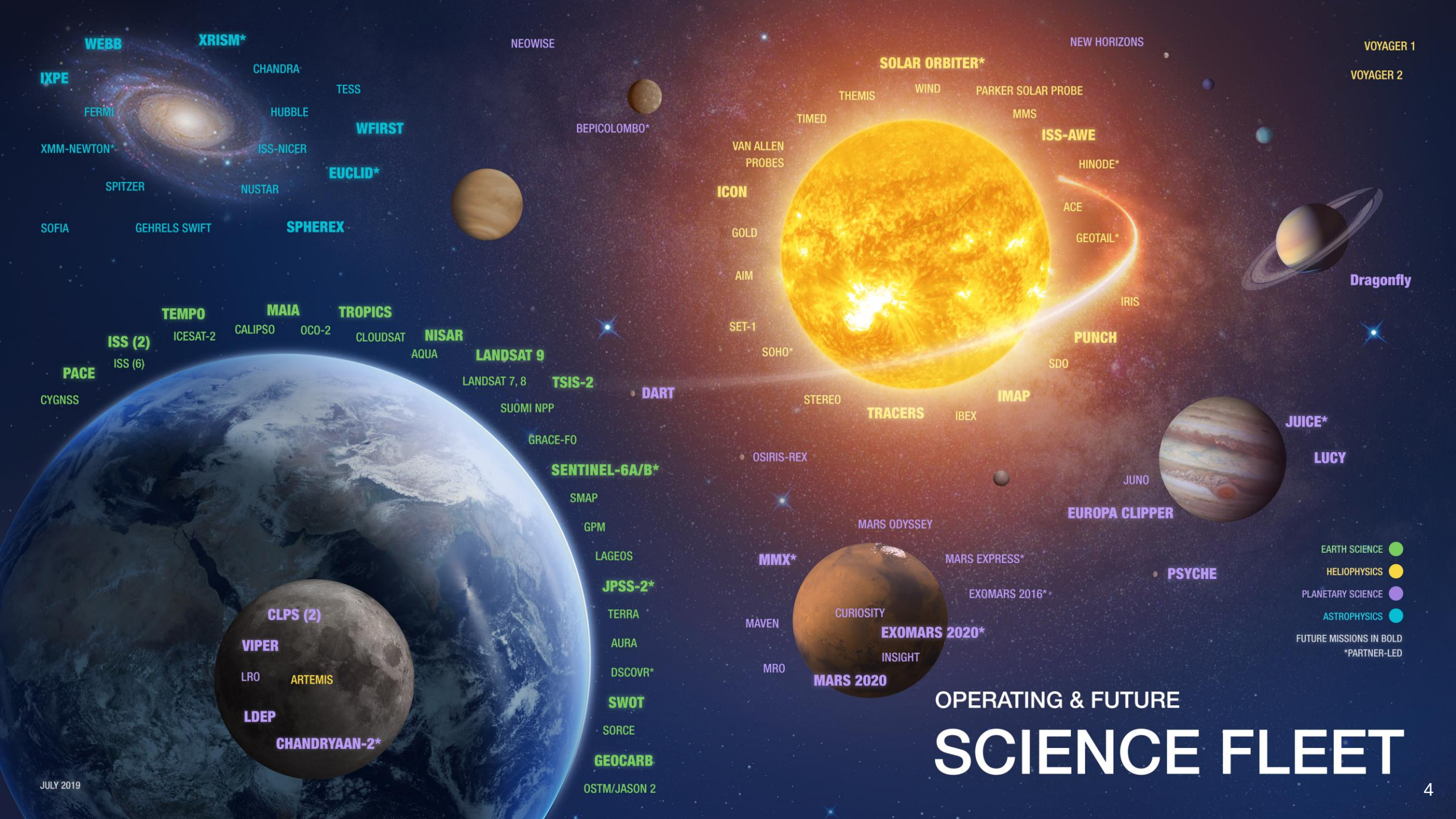
SPACECRAFT

98 Missions
82 Spacecraft

BALLOONS

10 Science Missions
4 Technology/Student





OPERATING & FUTURE

SCIENCE FLEET

EXPLORATION

INNOVATION

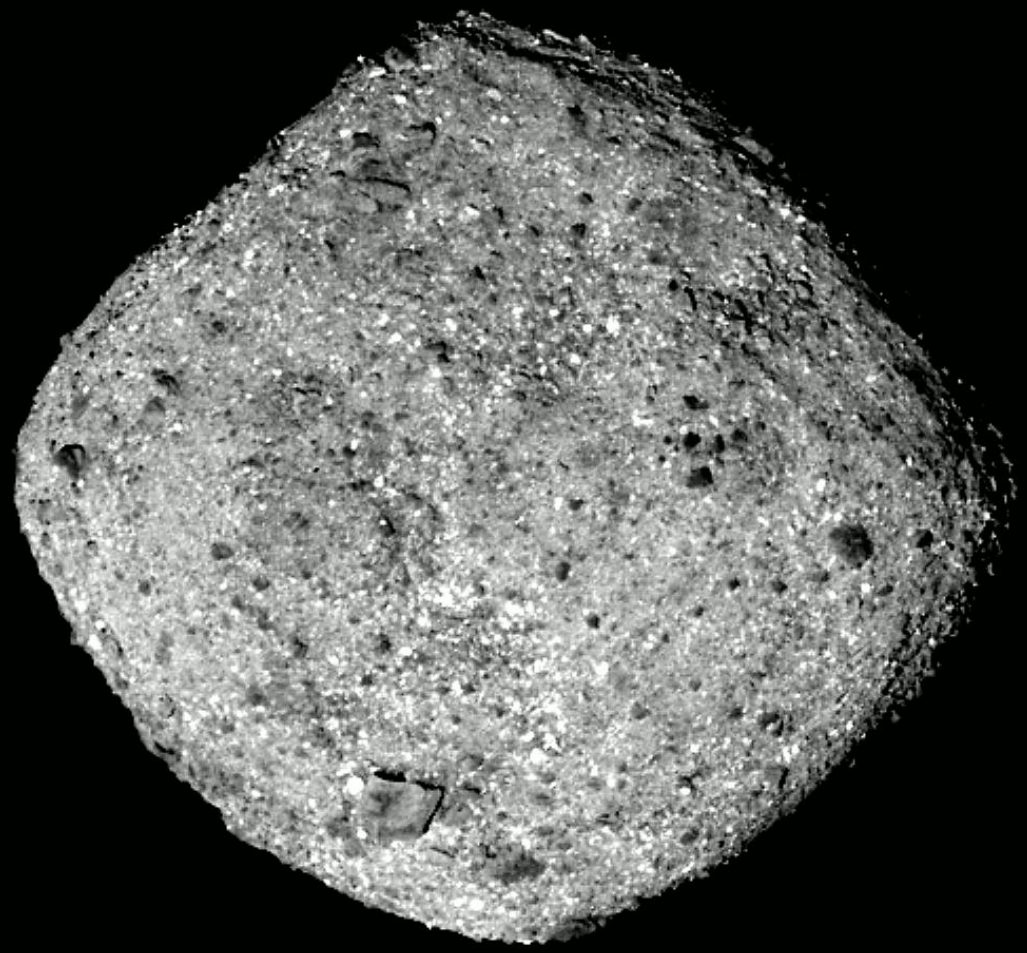
EXCELLENCE

EXPLORATION

INNOVATION

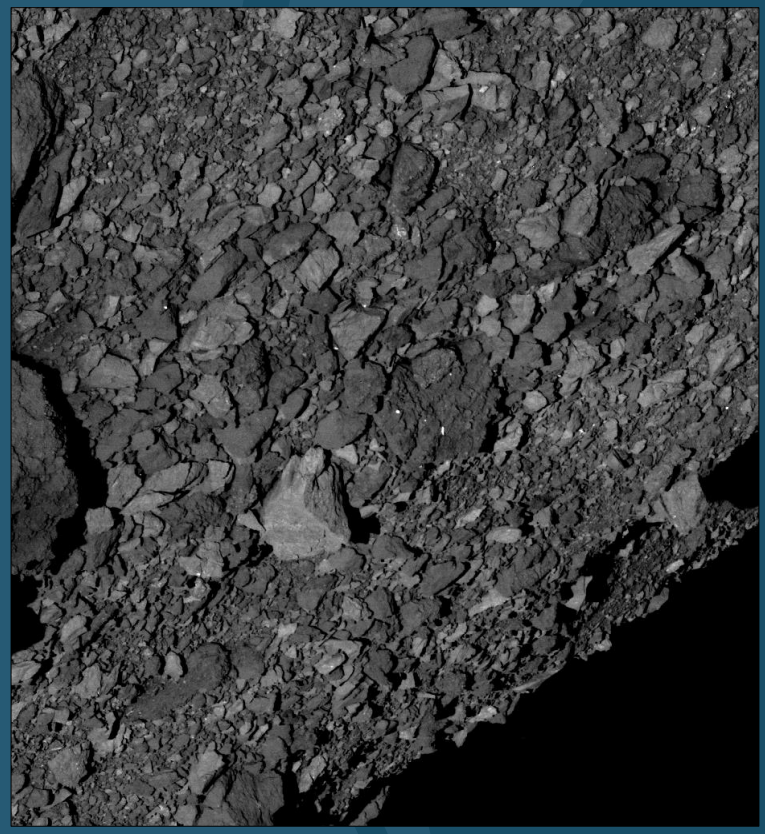
EXCELLENCE

OSIRIS-REx



PI: Dante Lauretta
Institution: University of Arizona
Program: New Frontiers, > $650 million

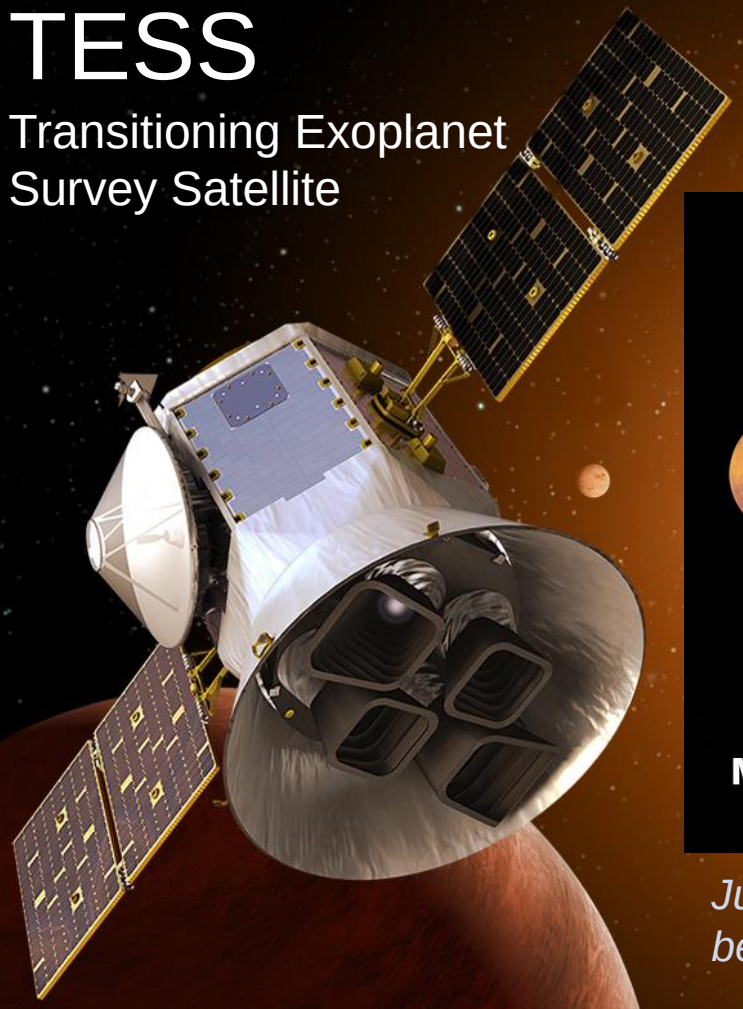
SCIENCE HIGHLIGHT

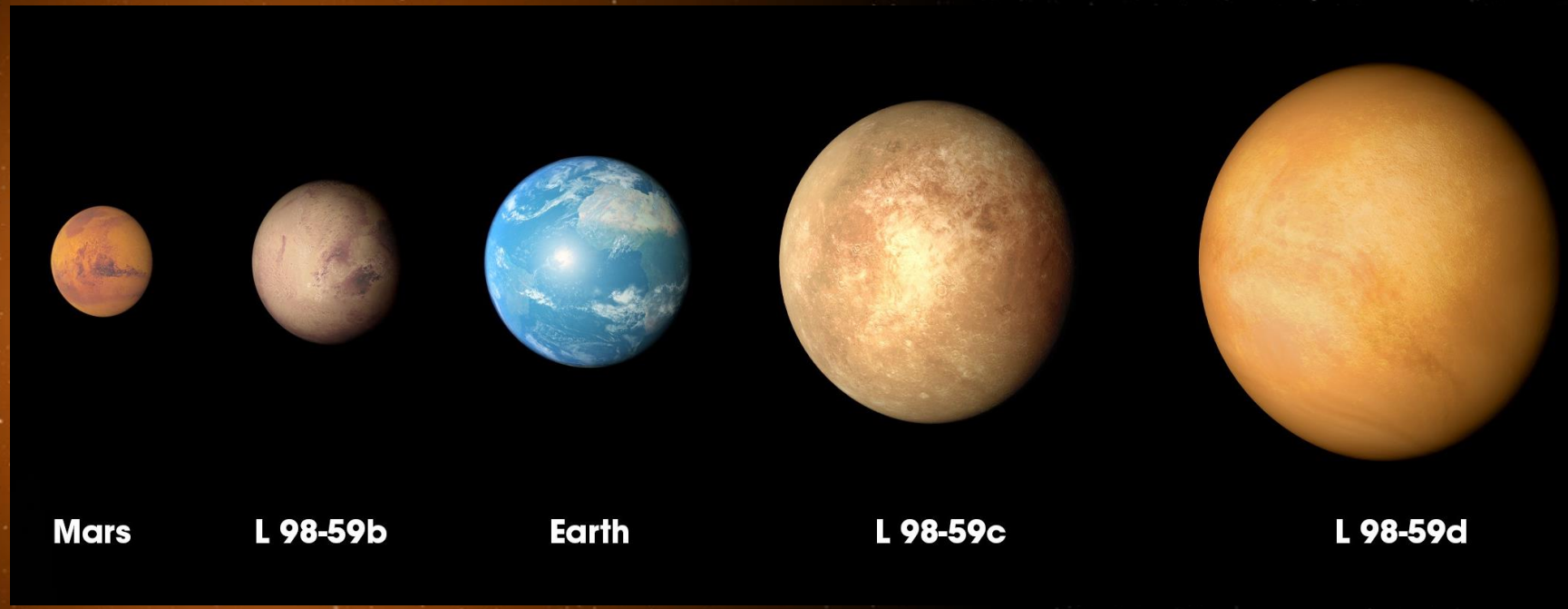


Mar. 7, 2019 – OSIRIS-REx image shows a view across Bennu's southern hemisphere; demonstrates the number and distribution of boulders

TESS

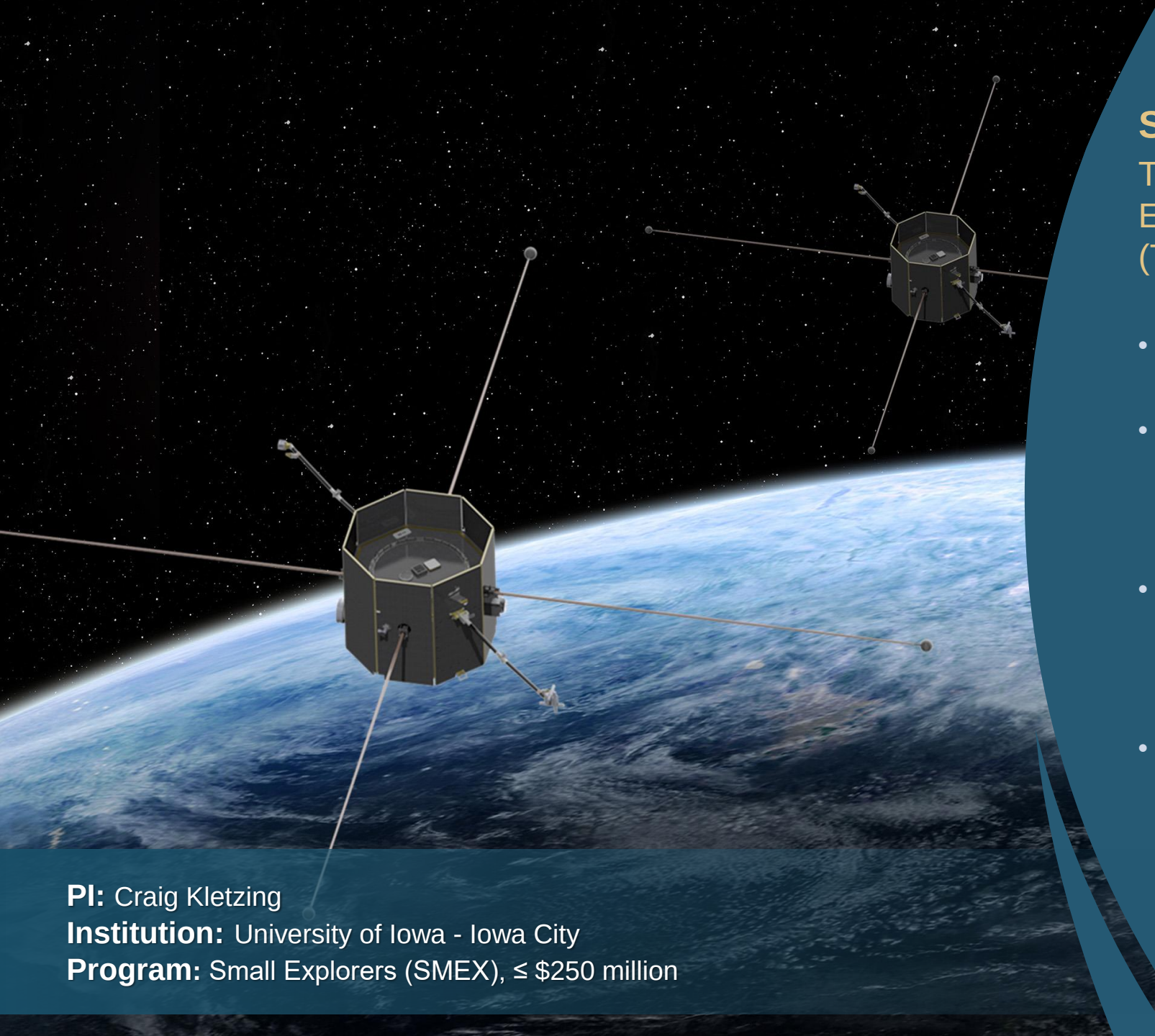
Transitioning Exoplanet Survey Satellite





June 27, 2019 – L 98-59b is the tiniest planet discovered by TESS to date, a world between the sizes of Mars and Earth orbiting a bright, cool, nearby star

PI: George Ricker
Institution: Massachusetts Institute of Technology
Program: Medium-Class Explorer (MIDEX), $250 ≤ $650 million



PI: Craig Kletzing
Institution: University of Iowa - Iowa City
Program: Small Explorers (SMEX), ≤ $250 million

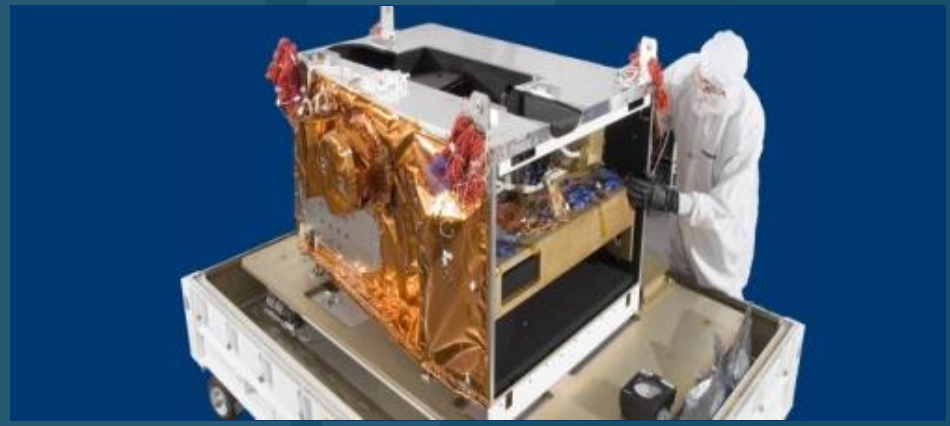
SMEX SELECTION:

Tandem Reconnection and Cusp Electrodynamics Reconnaissance Satellites (TRACERS)

- TRACERS will launch as a secondary payload on the same rocket with PUNCH
- Will use two spacecraft, built by Millennium Space Systems, to study particles and fields at Earth's northern magnetic cusp region near the North Pole
- Magnetic cusp provides an opening for solar radiation to reach deep into atmosphere, particularly during violent geomagnetic storms triggered by outbursts from Sun
- PUNCH and TRACERS missions scheduled to launch by August 2022

EARTH VENTURE SELECTION:

Geosynchronous Littoral Imaging and Monitoring Radiometer (GLIMR) instrument



- Competitively selected from eight proposals under NASA's fifth Earth Venture Instrument solicitation, awarded $107.9 million
- Opportunity for unique observations of ocean biology, chemistry, and ecology in Gulf of Mexico, portions of southeastern United States coastline, and Amazon River plume
- Helps protect ecosystem sustainability, improve resource management, and enhance economic activity

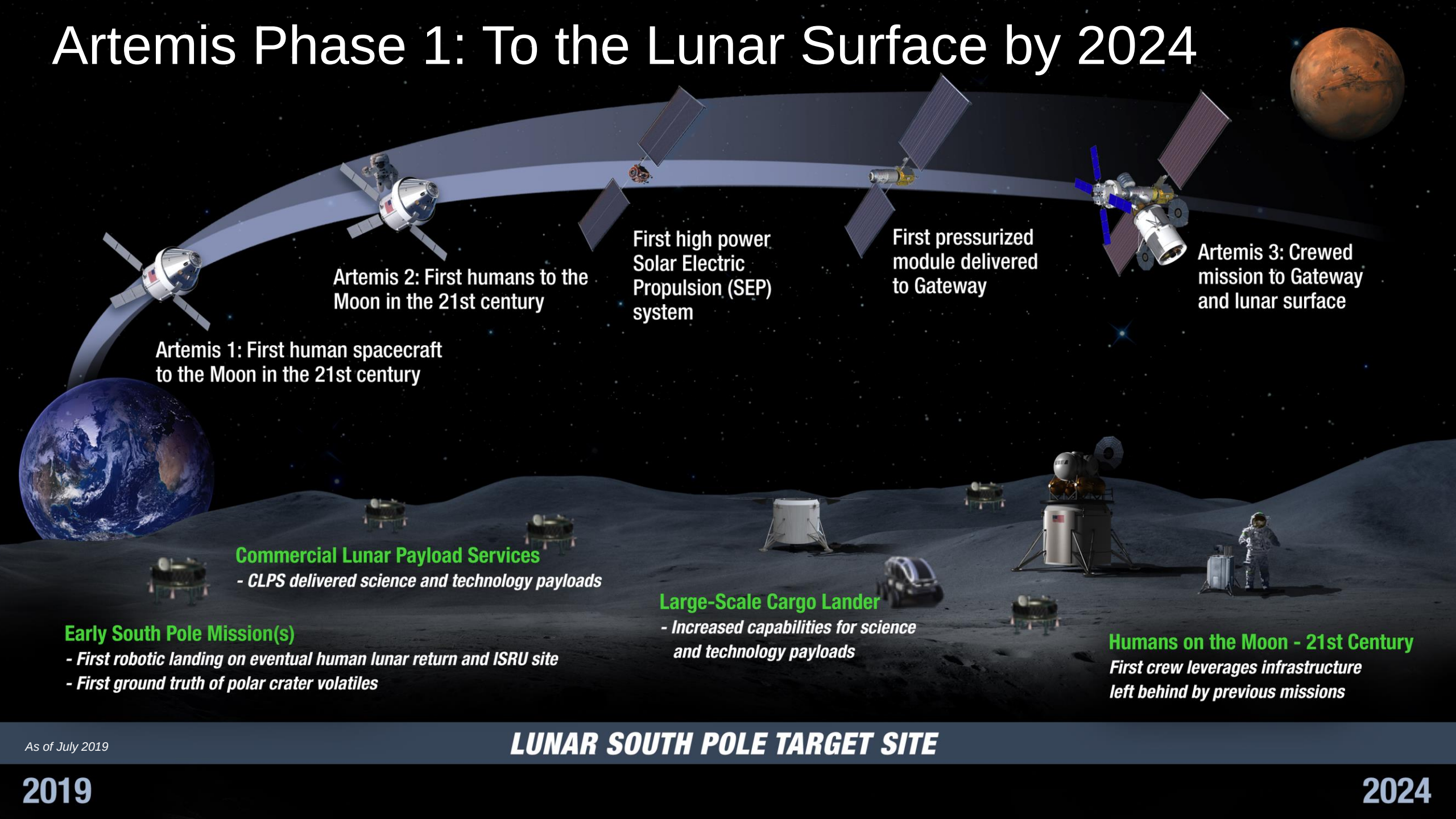
PI: Joseph Salisbury
Institution: University of New Hampshire, Durham
Program: Earth Venture, ≤ $250 million

EXPLORATION

INNOVATION

EXCELLENCE

Artemis Phase 1: To the Lunar Surface by 2024



As of July 2019

LUNAR SOUTH POLE TARGET SITE

2019 2024

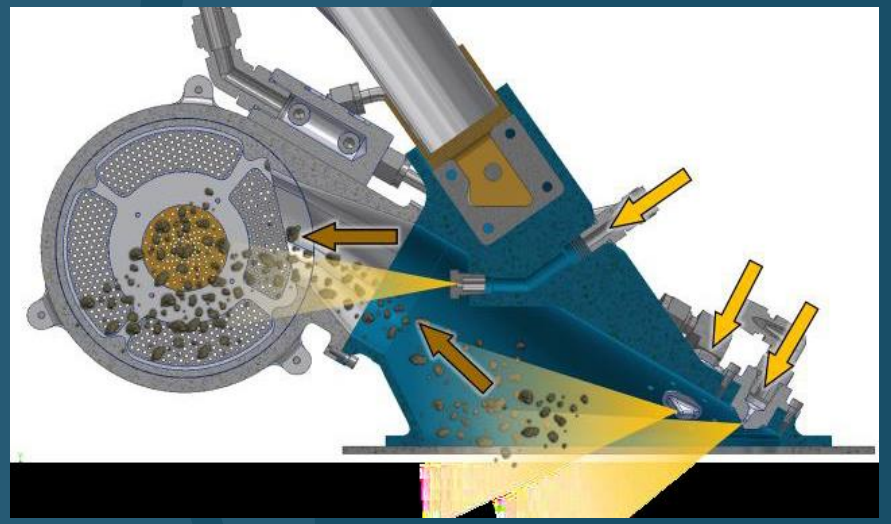
Apollo 17

Retrieving Lunar Samples

PI: Kris Zacny
Institution: Honeybee Robotics, Ltd
Program: Lunar Discovery and Exploration Program, ~ $3 million

LUNAR PAYLOAD SELECTION:

PlanetVac: Sample Acquisition and Delivery System for Instruments and Sample Return



- Technology to acquire and transfer regolith from lunar surface to instruments
- Used for in-situ analysis or transfer to a sample-return container for sample return missions

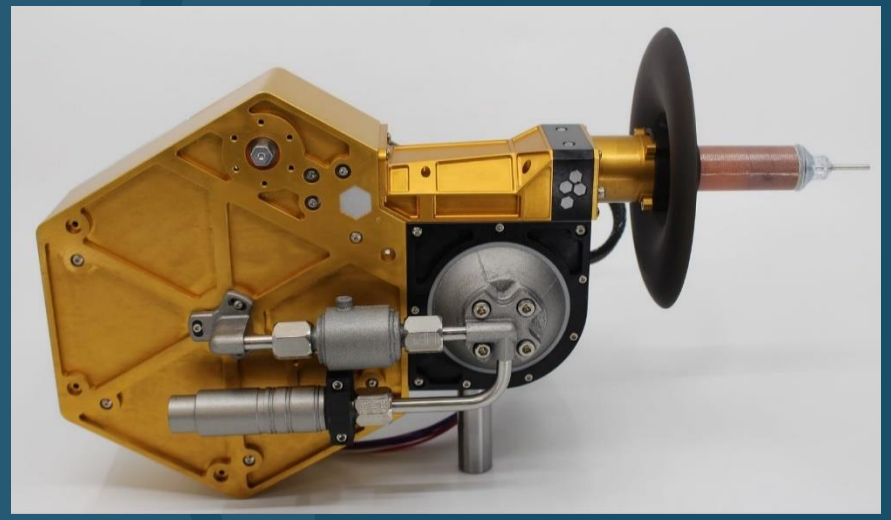
InSight

Taking the ‘Vital Signs’ of Mars

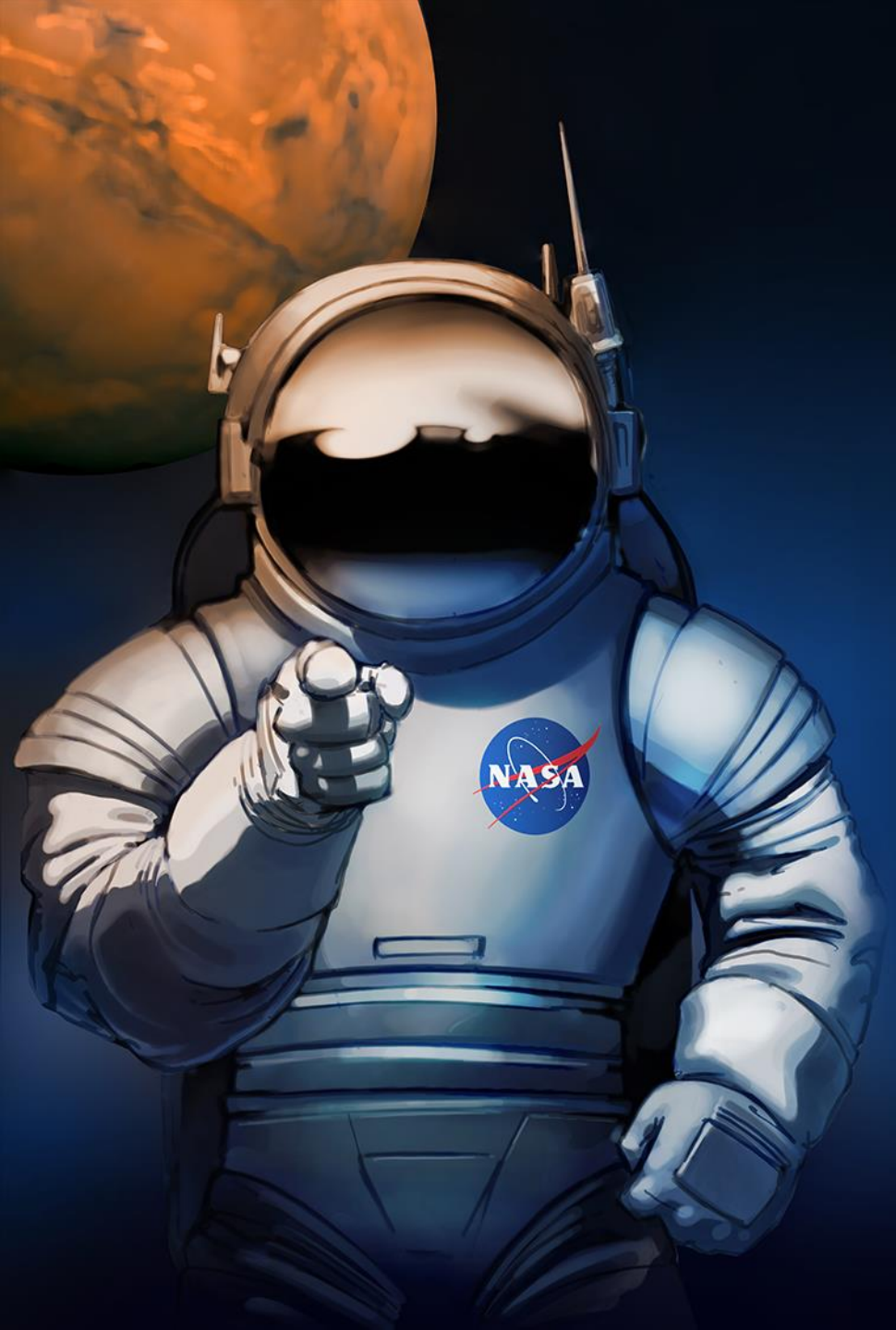
PI: Seiichi Nagihara
Institution: Texas Tech University
Program: Lunar Discovery and Exploration Program, ~ $3 million

LUNAR PAYLOAD SELECTION:

Lunar Instrumentation For Subsurface Thermal Exploration with Rapidity (LISTER)



- Instrument designed to measure heat flow from interior of Moon
- Probe would penetrate 2-3 meters into lunar regolith using pneumatic drilling
- Measures the regolith's thermal gradient and thermal conductivity

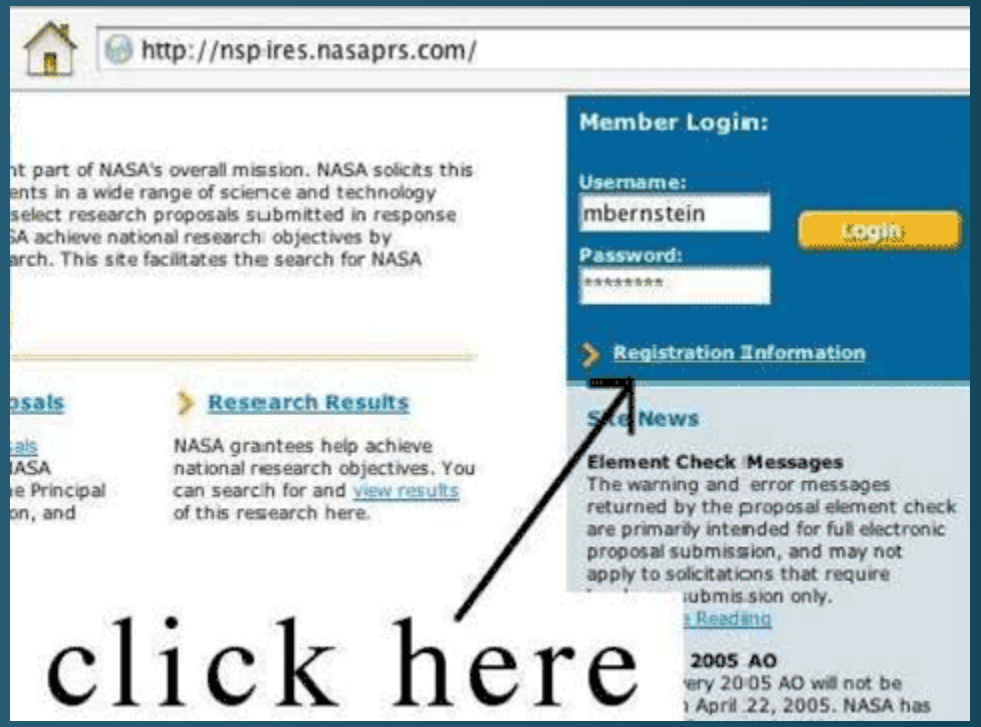


We Want YOU
To get Involved!

ROSES & You

- Research Opportunities in Space and Earth Science (ROSES), an omnibus solicitation for proposals
- Typically released on Valentine's Day, February 14
- Includes opportunities for Basic and Applied Research, Technology Development, Guest Investigator Programs, and Early Career Programs in support of NASA Science
- Contains many individual program elements, each with its own due date and topics
- Subscribe to NSPIRES RSS feed and mailing lists for updates, amendments, and clarifications to program elements
- ROSES How To Guide can be found at https://science.nasa.gov/researchers/sara/how-to-guide

NSPIRES



- NASA solicits research through the release of various research announcements in a wide range of science and technology disciplines
- All solicitations advertise and receive proposals through NSPIRES
- Learn about previous awardees and read successful abstracts
- Subscribe to NSPIRES to stay up-to-date on current and future opportunities
- Register and access NSPIRES here: http://nspires.nasaprs.com/
- Additional information here: https://science.nasa.gov/researchers/sara/how-to-guide/nspires-registration

Peer Review Panels

- NASA Science makes decisions based on competition and peer review
- Volunteering on a review panel is highly encouraged
  - Opportunity to learn how to write successful proposals
  - NASA provides honorarium for participants
- More information on how to volunteer here: https://science.nasa.gov/researchers/volunteer-review-panels

NASA Science Planned Announcements of Opportunity

FY 2019 Planned

- Discovery *(Released)*
- Earth Venture Continuity-1 Missions of Opportunity *(Released)*
- Astrophysics Explorers (SMEX) and Missions of Opportunity *(Released)*
- Heliophysics Explorers (MIDEX), Q3
- Earth Venture Mission-3, Q4

FY 2020 Planned

- Earth Venture Instrument-6, Q3

FY 2021 Planned

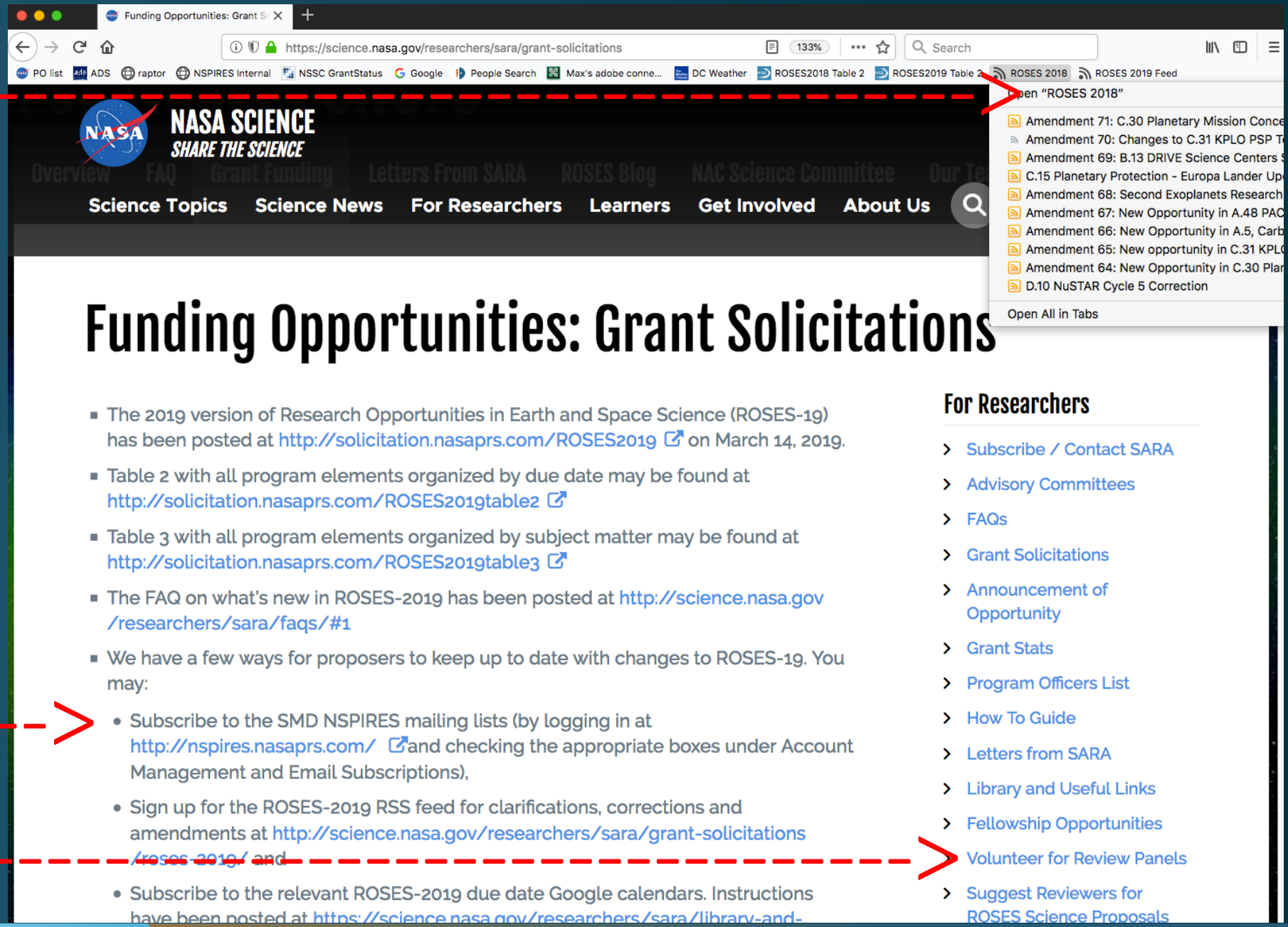
- Astrophysics Explorers (MIDEX) and Missions of Opportunity, Q4

For most current target release dates of future solicitations, go to Science Office for Missions Assessments website, https://soma.larc.nasa.gov/

Stay up to date with our RSS feed

Subscribe to the NSPIRES mailing list

Volunteer to serve on a review panel



EXPLORATION

INNOVATION

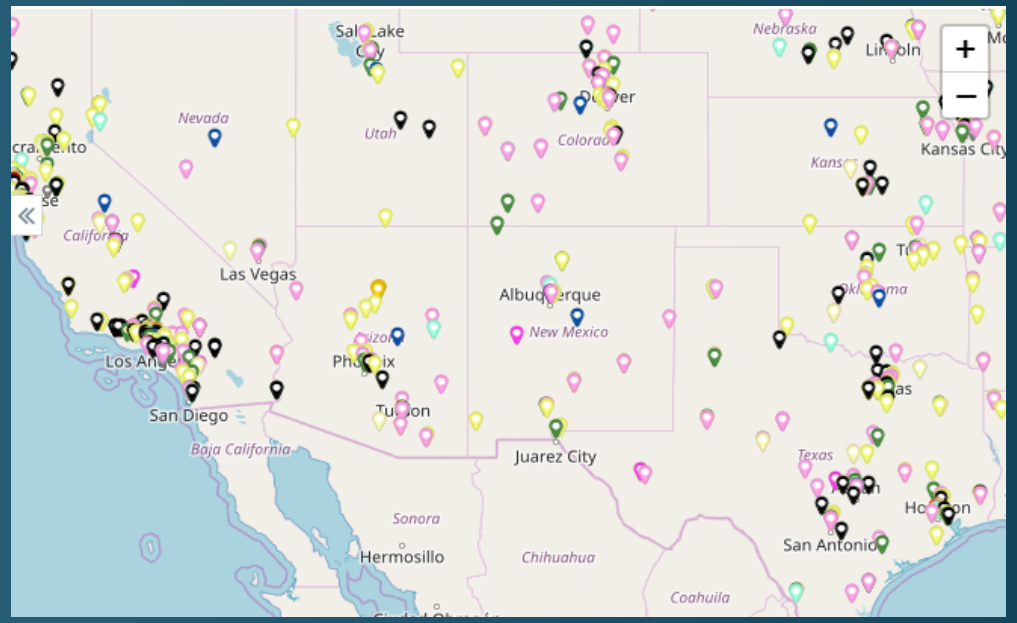
EXCELLENCE


Telescope


TEMPEST-D

Building Excellence

- Excellent teams bring diverse opinions and perspectives
- Teams must foster a community where everyone feels safe
- Encouraging healthy behavior through actions is paramount
- SMD is building excellent teams by:
  - Promoting diversity for both grants and PI-led missions
  - Providing resources to report concerns
  - Partnering with the Office of Diversity and Equal Opportunity
  - Examining barriers to diversity and inclusion within NASA and the broader science community



Science Activation Overview

- Leverage over 200 partnerships through network of science and community-based institutions using “multiplier effect” across U.S.
- Validate performance on each award using independent evaluators
- Utilize volunteer networks, such as Solar System Ambassadors and Night Sky Network, with over 1100 mobilized across U.S.
- For more about NASA Science Activation, go to: science.nasa.gov/learners
- For NASA Science in Spanish, go to: ciencia.nasa.gov

NASA Science innovates to inspire future leaders

Undergraduate and Graduate Research Opportunities

NASA Internships allow students to work directly with NASA. Many of these positions provide stipends and opportunities are available throughout the academic year. For more information, visit: http://Intern.nasa.gov

NASA's Summer Undergraduate Program for Planetary Research (SUPPR) is an eight-week summer internship that provides undergraduates the opportunity to participate in NASA planetary geosciences research under the direction of a NASA-sponsored investigator. For more information, visit: https://www.lpi.usra.edu/suppr/

NASA's Student Airborne Research Program (SARP) is an eight-week summer program for rising seniors to acquire hands-on research experience onboard NASA Earth-observing aircraft. For more information, visit: https://airbornescience.nasa.gov

Future Investigators in NASA Earth and Space Science and Technology (FINESST) invites proposals for graduate student-developed research or technology projects. For more information, visit: http://solicitation.nasaprs.com/

Post-Doc & Early Career Research Opportunities

The NASA Postdoctoral Program (NPP) offers fellowships to pursue research at NASA Centers or NASA-affiliated institutions. Although primarily for recent doctoral graduates, 'senior' NPP fellowships may also be awarded. For more information, visit: https://npp.usra.edu

NASA DEVELOP is a training program that allows recent graduate and early career professionals to apply NASA Earth observations to interdisciplinary projects involving government, nonprofits, and other organizations, while being mentored by NASA science advisors. For more information, visit: https://develop.larc.nasa.gov

The NASA Hubble Fellowship Program (NHFP) supports postdoctoral scientists to pursue independent research in any area of NASA Astrophysics, using theory, observation, experimentation, or instrumental development. For more information, visit: http://nhfp.stsci.edu

The Roman Technology Fellowship in Astrophysics provides early career researchers the opportunity to develop skills necessary to develop and lead astrophysics flight instruments/projects. For more information, visit: https://science.nasa.gov/researchers/sara/fellowship-programs/nancy-grace-roman-technology-fellowships-astrophysics-early-career-researchers

The New Investigator Program in Earth Science, Heliophysics Early Career Investigator Program, Early Career Award Program, and Early Career Fellowship Startup Program for Named Fellows support research and leadership development for early career scientists and engineers in these disciplines. Opportunities will be announced at https://nspires.nasaprs.com/external

Mission Principal Investigator Development

- Seek to increase the diversity of mission principal investigators and develop the next generation of mission leaders to ensure that new ideas and mission concepts are brought forward
- Based on feedback from November 2018 workshop, NASA Science
  - Developed a consolidated PI resources webpage at https://science.nasa.gov/researchers/new-pi-resources
  - Introduced a pre-reviews of mission peer review panels to ensure diversity and reduce conflicts of interest
  - Added a code of conduct requirement for SMD-funded conferences to ROSES 2019
  - Restarted proposal writing workshops at major science conferences
  - Included career development positions and associated evaluation criteria as part Discovery and New Frontiers Aos
  - Lessons learned presentation on characteristics and key mistakes associated with proposal success
    - Video: https://www.youtube.com/watch?v=xoLYRjm48-U
- Upcoming activities include:
  - Information sessions at science conferences and stand-alone workshops to support people developing first proposal
  - First workshop will be held October 16-18, 2019 in Tucson, AZ and information on how to register will be forthcoming
  - Sign up to learn more at https://lists.hq.nasa.gov/mailman/listinfo/hq-smdpi-workshop-outreach

Get Involved!

- NASA Solicitation Website: https://nspires.nasaprs.com/external/
- Research Resources: https://science.nasa.gov/researchers
- Review Panel Volunteers: https://science.nasa.gov/researchers/volunteer-review-panels
- Technology Resources: https://science.nasa.gov/technology
- Flight Mission Resources: https://soma.larc.nasa.gov
- Student Resources: https://science.nasa.gov/learners/learner-opportunities
- Summer Internships: https://intern.nasa.gov


EXPLORE
with us